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U.S. MARKETS FOR ZINC DIE CASTING 1976-80

ZINC INSTITUTE INC.

U.S. Zinc Die Casting Tonnage

1980	313,807 Tons
1979	382,655 Tons
1978	416,382 Tons
1977	418,319 Tons
1976	416,450 Tons

Table 1

Automotive Components	1980	103,593 Tons	33.0%
	1979	165,761 Tons	43.3%
	1978	192,492 Tons	46.2%
	1977	205,801 Tons	49.3%
	1976	206,597 Tons	49.6%
Builders Hardware	1980	83,767 Tons	26.7%
	1979	84,543 Tons	22.1%
	1978	93,078 Tons	22.4%
	1977	93,539 Tons	22.4%
	1976	87,614 Tons	21.0%
Electrical Components	1980	41,666 Tons	13.3%
	1979	42,986 Tons	11.2%
	1978	43,384 Tons	10.4%
	1977	38,956 Tons	9.3%
	1976	36,956 Tons	8.9%

Industrial, Agricultural and Commercial Machinery	1980	28,014 Tons	8.9%
	1979	29,763 Tons	7.8%
	1978	26,230 Tons	6.3%
	1977	24,685 Tons	5.9%
	1976	23,753 Tons	5.7%
Domestic Appliances	1980	25,128 Tons	8.0%
	1979	27,051 Tons	7.1%
	1978	29,690 Tons	7.1%
	1977	22,694 Tons	5.4%
	1976	30,256 Tons	7.3%
Miscellaneous Industries (Scale 2:1)	1980	12,808 Tons	4.1%
	1979	11,983 Tons	3.1%
	1978	11,009 Tons	2.6%
	1977	10,160 Tons	2.4%
	1976	10,867 Tons	2.6%
Sporting Goods and Toys (Scale 2:1)	1980	10,220 Tons	3.2%
	1979	10,037 Tons	2.6%
	1978	9,519 Tons	2.3%
	1977	10,564 Tons	2.5%
	1976	9,849 Tons	2.4%
Scientific and Professional Equipment (Scale 2:1)	1980	4,642 Tons	1.5%
	1979	6,201 Tons	1.6%
	1978	6,151 Tons	1.5%
	1977	5,901 Tons	1.4%
	1976	5,377 Tons	1.3%
Sound and Television Equipment (Scale 2:1)	1980	3,969 Tons	1.3%
	1979	4,331 Tons	1.2%
	1978	4,829 Tons	1.2%
	1977	6,019 Tons	1.4%
	1976	5,181 Tons	1.2%

U.S. Zinc Die Casters

1980	443 Die Casters
1979	444 Die Casters
1978	455 Die Casters
1977	460 Die Casters
1976	446 Die Casters

Table 2

Automotive Components	1980	206 Die Casters	47%
	1979	200 Die Casters	45%
	1978	209 Die Casters	46%
	1977	203 Die Casters	44%
	1976	190 Die Casters	43%
Builders Hardware	1980	243 Die Casters	55%
	1979	253 Die Casters	57%
	1978	247 Die Casters	54%
	1977	250 Die Casters	54%
	1976	239 Die Casters	54%
Electrical Components	1980	186 Die Casters	42%
	1979	193 Die Casters	43%
	1978	188 Die Casters	41%
	1977	186 Die Casters	40%
	1976	178 Die Casters	40%

Industrial, Agricultural and Commercial Machinery	1980	192 Die Casters	43%
	1979	195 Die Casters	44%
	1978	193 Die Casters	42%
	1977	190 Die Casters	41%
	1976	189 Die Casters	42%
Domestic Appliances	1980	144 Die Casters	33%
	1979	156 Die Casters	35%
	1978	152 Die Casters	33%
	1977	145 Die Casters	32%
	1976	151 Die Casters	34%
Miscellaneous Industries	1980	116 Die Casters	26%
	1979	114 Die Casters	26%
	1978	122 Die Casters	27%
	1977	113 Die Casters	25%
	1976	96 Die Casters	22%
Sporting Goods and Toys	1980	93 Die Casters	21%
	1979	90 Die Casters	20%
	1978	91 Die Casters	20%
	1977	98 Die Casters	21%
	1976	83 Die Casters	19%
Scientific and Professional Equipment	1980	102 Die Casters	23%
	1979	103 Die Casters	23%
	1978	113 Die Casters	25%
	1977	110 Die Casters	24%
	1976	97 Die Casters	22%
Sound and Television Equipment	1980	76 Die Casters	17%
	1979	76 Die Casters	17%
	1978	84 Die Casters	18%
	1977	88 Die Casters	19%
	1976	77 Die Casters	17%

U.S. Markets for Zinc Die Casting 1976-80

In this study Zinc Institute (ZI) publishes its seventh annual report on end uses of zinc die castings, analyzing the market breakdown for 1980. The figures used, as always, are not ZI's—they are provided by zinc die casters who voluntarily make this study possible.

The market breakdowns used herein are identical with those used in England and Canada, which permits comparative analysis of market strength and trends on a specific market by market basis.

During 1980 Zinc Institute learned of ten new zinc die casting locations, as well as 11 that are no longer active. The number of total die casters has been adjusted accordingly to 443.

Of these companies, 441 either answered the Zinc Institute questionnaire or responded to personal or telephone follow-up. Tonnages for the two plants that did not release figures were estimated based on known production capacities. Their total tonnage amounts to less than .5% of the total.

No distinction is made in the ZI report between custom and captive die casting since this definition depends on shop and machine time available in any given period.

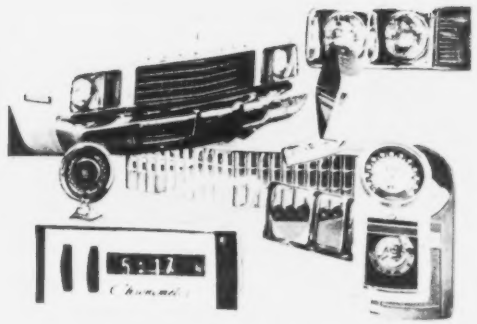
It is hoped that this report will continue annually to provide a better statistical marketing guide for zinc die casters and their major suppliers.

For this report, the 313,807 tons of zinc die castings shipped by casters in 1980 compares to the 269,697 tons reported as zinc base alloy use of slab zinc in the preliminary Bureau of Mines report for 1980. The Bureau's figure for 1980 includes an estimated 40,124 tons of zinc base alloy unreported to date. It has been felt that tonnage from non-reporting zinc alloy producers and users would add to the totals reported to the Bureau of Mines as consumed.

Zinc die casting's traditional number one die casting market, automotive, is still dominant. At 103,593 tons, it represents 33% of the total 313,807 tons. Builders hardware retained second place, 83,767 tons, 26.7% of the market in 1980. Electrical components remained in third place with 41,666 tons or 13.3% of the market. Industrial, agricultural and commercial machinery remained in fourth place with 28,014 tons, or 8.9% of the market.

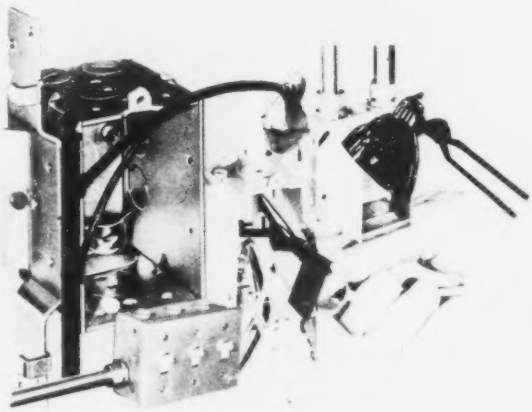
Complete figures in Tables 1 and 2 show zinc die casting tonnages and percentages, as well as the number and percentages of die casters in each of the nine major markets.

Automotive Components



Builders Hardware

Electrical Components



1980	103,593 Tons	33.0%
1979	165,761 Tons	43.3%
1978	192,492 Tons	46.2%
1977	205,801 Tons	49.3%
1976	206,597 Tons	49.6%

(Scale 1:2)

Zinc die castings manufactured for the automotive market at 103,593 tons were 33% of total 1980 sales. This reflects significantly the drive of automotive producers to lighten cars. In addition, ThinWall zinc continues to be an important factor with the introduction of 1981 models in the fall of 1980. This saved zinc applications, but also reduced tonnage. Die casters in this market were 206 in number, 47% of the total.

The market consists of handles and locks, mechanical components, electrical components, body hardware and trim, lamp and lighting fittings, instruments and other automotive components. Pounds of zinc die castings per average car, again reflecting the need for lighter weight, and ThinWall zinc, dropped from nearly 45 pounds per car in 1976 to 39.5 in 1977, 30 in 1978, 28 in 1979, 25 in the 1980 models and 24.2 in the 1981 models.

1980	83,767 Tons	26.7%
1979	84,543 Tons	22.1%
1978	93,078 Tons	22.4%
1977	93,539 Tons	22.4%
1976	87,614 Tons	21.0%

(Scale 1:2)

Builders hardware, second largest market for zinc at 83,767 tons, took 26.7% of the market. Die casters involved were 243, 55% of the total.

In spite of the serious condition of the housing industry, this market's decline appears to have slowed, showing a decline of only 776 tons from its 1979 level.

The market covers door and window hardware, locks and keys, furniture and cabinet hardware, hand tools and cutlery, bathroom and plumbing fittings, general hardware, marine hardware, and luggage hardware.

1980	41,666 Tons	13.3%
1979	42,986 Tons	11.2%
1978	43,384 Tons	10.4%
1977	38,956 Tons	8.9%
1976	36,956 Tons	8.9%

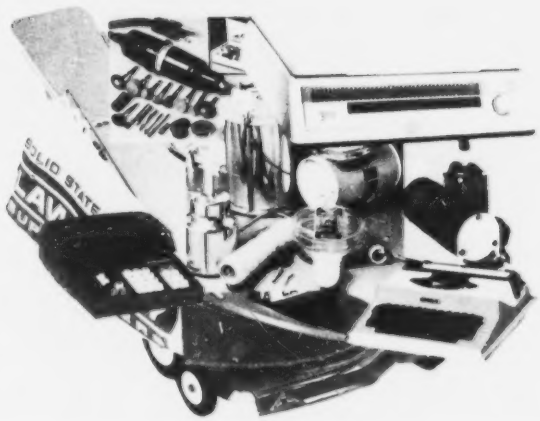
(Scale 1:2)

Electrical components reached 41,666 tons for 13.3% of the market and a clear hold on third place among zinc die cast markets, shared by 186 die casters, 42% of the producers.

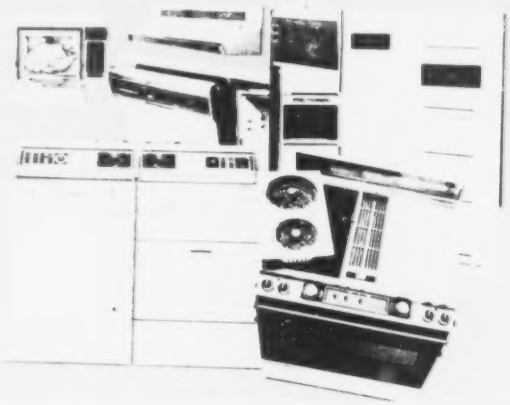
The market includes conduit fittings, switches, plugs and sockets, telecommunication equipment, switch gear, pole-line hardware, motor components, lighting fixtures and equipment.

This industrially oriented market, which is more stable than consumer goods, is nevertheless strongly affected by construction, particularly in the residential housing field.

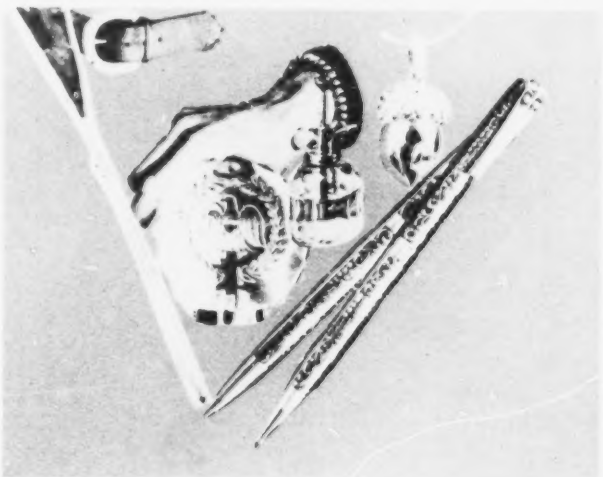
Industrial, Agricultural and Commercial Machinery



Domestic Appliances



Miscellaneous Industries



1980	28,014 Tons	8.9%
1979	29,763 Tons	7.8%
1978	26,230 Tons	6.3%
1977	24,685 Tons	5.9%
1976	23,753 Tons	5.7%

(Scale 1:2)

In 1980, the consumer-oriented markets, for the most part, seemed to continue at 1979 levels. In fourth place, industrial, agricultural and commercial machinery accounted for 28,014 tons and 8.9% of the total. 192 die casters, 43%, were in this market.

This market includes copying equipment, office equipment, business machines, agricultural and food machinery, vending machines, machine tools, power tools, central heating and air conditioning, power-operated garden equipment, lawn mowers, snow blowers and gasoline service station equipment.

1980	25,128 Tons	8.0%
1979	27,051 Tons	7.1%
1978	29,690 Tons	7.1%
1977	22,694 Tons	5.4%
1976	30,256 Tons	7.3%

(Scale 1:2)

This market at 25,128 tons, 8%, remained in fifth place in 1980. The number of die casters, 144, or 33%, decreased slightly.

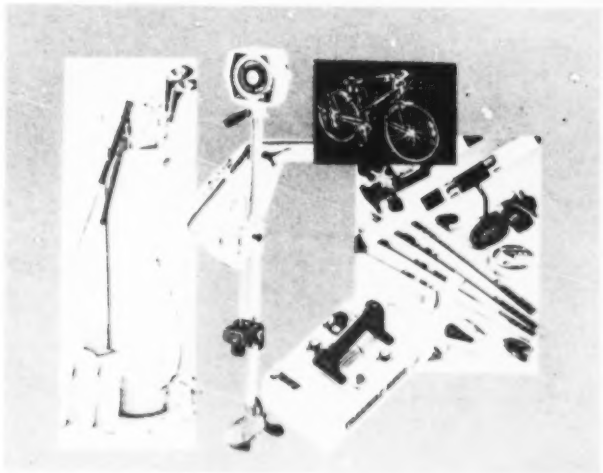
The market includes vacuum cleaners, floor polishers, refrigerators and freezers, ranges, washing machines and dryers, dishwashers, small appliances, heating appliances, room air conditioners, fans and sewing-machine components.

1980	12,808 Tons	4.1%
1979	11,983 Tons	3.1%
1978	11,009 Tons	2.6%
1977	10,160 Tons	2.4%
1976	10,867 Tons	2.6%

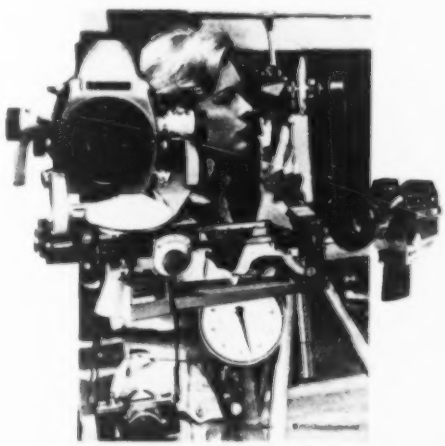
(Scale 2:1)

Markets named by relatively few die casters were arbitrarily grouped here and increased slightly in 1980 to 12,808 tons or 4.1% of the total. A total of 116 die casters, 26% of them, reported in this category which sold to markets such as tableware, jewelry and ornaments, fancy goods and souvenirs, zippers, buttons and buckles. This was zinc's sixth largest market for 1980.

Sporting Goods and Toys



Scientific and Professional Equipment



Sound and Television Equipment

1980	10,220 Tons	3.2%
1979	10,037 Tons	2.6%
1978	9,519 Tons	2.3%
1977	10,564 Tons	2.5%
1976	9,849 Tons	2.4%

(Scale 2:1)

Zinc's die casting production in 1980 increased to 10,220 tons, or 3.2% of the total market, remaining in seventh place. Ninety-three die casters, or 21%, participated.

The market consists of toys, musical instruments, and sports goods.

1980	4,642 Tons	1.5%
1979	6,201 Tons	1.6%
1978	6,151 Tons	1.5%
1977	5,901 Tons	1.4%
1976	5,377 Tons	1.3%

(Scale 2:1)

At 4,642 tons, or 1.5% in 1980, this market dropped 1,559 tons from the 6,201 tons recorded in 1979. A total of 102 die casters, 23% of the market, sold to makers of valves, scientific instruments, timing devices, cameras and projectors and optical instruments. This was zinc's eighth largest market for 1980.

1980	3,969 Tons	1.3%
1979	4,331 Tons	1.2%
1978	4,829 Tons	1.2%
1977	6,019 Tons	1.4%
1976	5,181 Tons	1.2%

(Scale 2:1)

With 3,969 tons and 1.3% of the market, these consumer-oriented products dropped in 1980. Seventy-six die casters, 17%, were involved in this market area. It consists of assemblies and parts for radio, television, record and tape players. This was zinc's ninth largest market for 1980.

This continuing decline can probably be attributed to increased foreign imports.

While every effort has been made to assure that the information given in this booklet is technically correct, Zinc Institute Inc. does not warrant its accuracy.

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